```
FILE 'REGISTRY' ENTERED AT 09:22:43 ON 03 JUL 2007
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    2 JUL 2007  HIGHEST RN 940883-34-1
DICTIONARY FILE UPDATES:   2 JUL 2007  HIGHEST RN 940883-34-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> s si4f12
L11           0 SI4F12

=> s si5f12
L12           0 SI5F12

=> s csi4f12
L13           0 CSI4F12

=> s si4cf12
L14           0 SI4CF12

=> s si2f6
L15           1 SI2F6

=> d

L15  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2007 ACS on STN
RN   13830-68-7  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   Disilane, hexafluoro- (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Silicon fluoride (Si2F6) (7CI, 8CI)
OTHER NAMES:
CN   Disilicon hexafluoride
CN   Hexafluorodisilane
CN   Perfluorodisilane
MF   F6 Si2
CI   COM
LC   STN Files:   CA, CAOLD, CAPLUS, CASREACT, CHEMLIST, DETHERM*, GMELIN*,
       IFICDB, IFIUDB, PROMT, TOXCENTER, USPAT2, USPATFULL
         (*File contains numerically searchable property data)
```

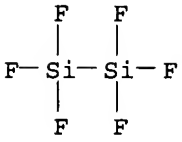

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

255 REFERENCES IN FILE CA (1907 TO DATE)
255 REFERENCES IN FILE CAPLUS (1907 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> s si3f9
L16 0 SI3F9

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSSptau223dxm

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	MAR 15	WPIDS/WPIX enhanced with new FRAGHITSTR display format
NEWS 3	MAR 16	CASREACT coverage extended
NEWS 4	MAR 20	MARPAT now updated daily
NEWS 5	MAR 22	LWPI reloaded
NEWS 6	MAR 30	RDISCLOSURE reloaded with enhancements
NEWS 7	APR 02	JICST-EPLUS removed from database clusters and STN
NEWS 8	APR 30	GENBANK reloaded and enhanced with Genome Project ID field
NEWS 9	APR 30	CHEMCATS enhanced with 1.2 million new records
NEWS 10	APR 30	CA/CAplus enhanced with 1870-1889 U.S. patent records
NEWS 11	APR 30	INPADOC replaced by INPADOCDB on STN
NEWS 12	MAY 01	New CAS web site launched
NEWS 13	MAY 08	CA/CAplus Indian patent publication number format defined
NEWS 14	MAY 14	RDISCLOSURE on STN Easy enhanced with new search and display fields
NEWS 15	MAY 21	BIOSIS reloaded and enhanced with archival data
NEWS 16	MAY 21	TOXCENTER enhanced with BIOSIS reload
NEWS 17	MAY 21	CA/CAplus enhanced with additional kind codes for German patents
NEWS 18	MAY 22	CA/CAplus enhanced with IPC reclassification in Japanese patents
NEWS 19	JUN 27	CA/CAplus enhanced with pre-1967 CAS Registry Numbers
NEWS 20	JUN 29	STN Viewer now available
NEWS 21	JUN 29	STN Express, Version 8.2, now available
NEWS 22	JUL 02	LEMBASE coverage updated
NEWS 23	JUL 02	LMEDLINE coverage updated
NEWS 24	JUL 02	SCISEARCH enhanced with complete author names
NEWS 25	JUL 02	CHEMCATS accession numbers revised
NEWS 26	JUL 02	CA/CAplus enhanced with utility model patents from China

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 4 MAY 2007.

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS LOGIN	Welcome Banner and News Items
NEWS IPC8	For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 07:19:41 ON 03 JUL 2007

=> file reg
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 07:20:03 ON 03 JUL 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
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STRUCTURE FILE UPDATES: 2 JUL 2007 HIGHEST RN 940883-34-1
DICTIONARY FILE UPDATES: 2 JUL 2007 HIGHEST RN 940883-34-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

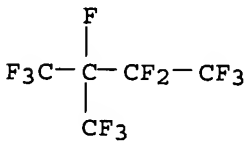
REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> s c5f12
L1 16 C5F12

=> d

L1 ANSWER 1 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 790697-51-7 REGISTRY
ED Entered STN: 30 Nov 2004
CN Butane, 1,1,1,2,2,3,4,4,4-nonafluoro-3-(trifluoromethyl)-, radical ion(1-)
(9CI) (CA INDEX NAME)
OTHER NAMES:
CN Perfluoroisopentane radical ion(1-)
MF C5 F12
CI RIS
SR CA
LC STN Files: CA, CAPLUS



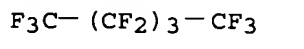
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d2
D2 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

=> d 2

L1 ANSWER 2 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 790697-47-1 REGISTRY
ED Entered STN: 30 Nov 2004
CN Pentane, dodecafluoro-, radical ion(1-) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Perfluoropentane radical ion(1-)
MF C5 F12
CI RIS
SR CA
LC STN Files: CA, CAPLUS



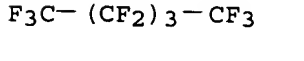
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d 3

L1 ANSWER 3 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 164461-32-9 REGISTRY
ED Entered STN: 07 Jul 1995
CN Hexane, mixt. with dodecafluoropentane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pentane, dodecafluoro-, mixt. contg. (9CI)
MF C6 H14 . C5 F12
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH, USPATFULL

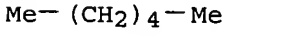
CM 1

CRN 678-26-2
CMF C5 F12



CM 2

CRN 110-54-3
CMF C6 H14



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

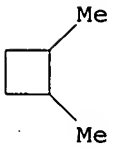
=> d 4-16

L1 ANSWER 4 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 164461-31-8 REGISTRY
ED Entered STN: 07 Jul 1995
CN Cyclobutane, 1,2-dimethyl-, mixt. with dodecafluoropentane (9CI) (CA

INDEX NAME)
OTHER CA INDEX NAMES:
CN Pentane, dodecafluoro-, mixt. contg. (9CI)
MF C6 H12 . C5 F12
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH, USPATFULL

CM 1

CRN 4202-23-7
CMF C6 H12



CM 2

CRN 678-26-2
CMF C5 F12

$F_3C-(CF_2)_3-CF_3$

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 5 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 164461-27-2 REGISTRY
ED Entered STN: 07 Jul 1995
CN Heptane, mixt. with dodecafluoropentane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pentane, dodecafluoro-, mixt. contg. (9CI)
MF C7 H16 . C5 F12
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH, USPATFULL

CM 1

CRN 678-26-2
CMF C5 F12

$F_3C-(CF_2)_3-CF_3$

CM 2

CRN 142-82-5
CMF C7 H16

$Me-(CH_2)_5-Me$

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 6 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 164461-26-1 REGISTRY
ED Entered STN: 07 Jul 1995
CN Pentane, dodecafluoro-, mixt. with 2-methoxy-2-methylpropane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Propane, 2-methoxy-2-methyl-, mixt. contg. (9CI)
MF C5 H12 O . C5 F12
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH, USPATFULL

CM 1

CRN 1634-04-4
CMF C5 H12 O

t-Bu—O—Me

CM 2

CRN 678-26-2
CMF C5 F12

$F_3C-(CF_2)_3-CF_3$

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 7 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 164461-25-0 REGISTRY
ED Entered STN: 07 Jul 1995
CN Pentane, dodecafluoro-, mixt. with 2,2-dichloro-1,1,1-trifluoroethane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Ethane, 2,2-dichloro-1,1,1-trifluoro-, mixt. contg. (9CI)
MF C5 F12 . C2 H Cl2 F3
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH, USPATFULL

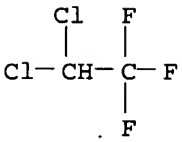
CM 1

CRN 678-26-2
CMF C5 F12

$F_3C-(CF_2)_3-CF_3$

CM 2

CRN 306-83-2
CMF C2 H Cl2 F3

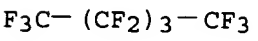


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 8 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 156853-88-2 REGISTRY
ED Entered STN: 05 Aug 1994
CN Pentane, dodecafluoro-, mixt. with 1,1,1,2,2,3,4,4,4-nonafluoro-3-(trifluoromethyl)butane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butane, 1,1,1,2,2,3,4,4,4-nonafluoro-3-(trifluoromethyl)-, mixt. contg. (9CI)
OTHER NAMES:
CN EchoGen
CN EchoGen Emulsion
CN FC 41-12
MF C5 F12 . C5 F12
CI MXS
SR US Adopted Names Council (USAN)
LC STN Files: BIOSIS, CA, CAPLUS, CIN, PROMT, TOXCENTER

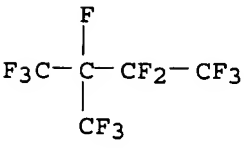
CM 1

CRN 678-26-2
CMF C5 F12



CM 2

CRN 594-91-2
CMF C5 F12

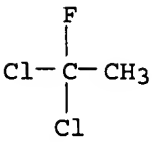


3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 9 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 152211-04-6 REGISTRY
ED Entered STN: 12 Jan 1994
CN Pentane, dodecafluoro-, mixt. with 1,1-dichloro-1-fluoroethane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Ethane, 1,1-dichloro-1-fluoro-, mixt. contg. (9CI)
MF C5 F12 . C2 H3 Cl2 F
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH

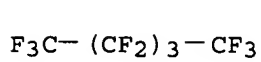
CM 1

CRN 1717-00-6
CMF C2 H3 Cl2 F



CM 2

CRN 678-26-2
CMF C5 F12



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

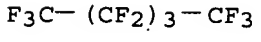
L1 ANSWER 10 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 151263-80-8 REGISTRY
ED Entered STN: 17 Nov 1993
CN Pentane, dodecafluoro-, mixt. with nitrogen (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Nitrogen, mixt. contg. (9CI)
OTHER NAMES:
CN Dodecafluoropentane-nitrogen mixt.
MF C5 F12 . N2
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH

CM 1

CRN 7727-37-9
CMF N2

CM 2

CRN 678-26-2
CMF C5 F12



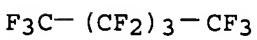
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 11 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN

RN 141536-95-0 REGISTRY
ED Entered STN: 29 May 1992
CN 2-Propanone, mixt. with 1,3-bis(trifluoromethyl)benzene, dodecafluoropentane and tetradecafluorohexane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Benzene, 1,3-bis(trifluoromethyl)-, mixt. contg. (9CI)
CN Hexane, tetradecafluoro-, mixt. contg. (9CI)
CN Pentane, dodecafluoro-, mixt. contg. (9CI)
MF C8 H4 F6 . C6 F14 . C5 F12 . C3 H6 O
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH

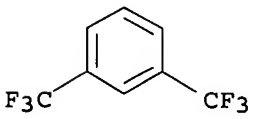
CM 1

CRN 678-26-2
CMF C5 F12



CM 2

CRN 402-31-3
CMF C8 H4 F6

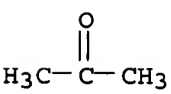


CM 3

CRN 355-42-0
CMF C6 F14

CM 4

CRN 67-64-1
CMF C3 H6 O



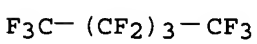
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 12 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 141536-94-9 REGISTRY
ED Entered STN: 29 May 1992
CN 2-Propanone, mixt. with dodecafluoropentane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7-pentadecafluoroheptane and tetradecafluorohexane (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:
CN Heptane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7-pentadecafluoro-, mixt. contg. (9CI)
CN Hexane, tetradecafluoro-, mixt. contg. (9CI)
CN Pentane, dodecafluoro-, mixt. contg. (9CI)
MF C7 H F15 . C6 F14 . C5 F12 . C3 H6 O
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH

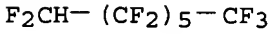
CM 1

CRN 678-26-2
CMF C5 F12



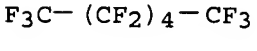
CM 2

CRN 375-83-7
CMF C7 H F15



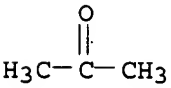
CM 3

CRN 355-42-0
CMF C6 F14



CM 4

CRN 67-64-1
CMF C3 H6 O

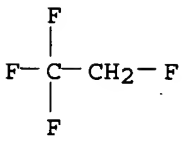


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 13 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 133317-97-2 REGISTRY
ED Entered STN: 19 Apr 1991
CN Pentane, dodecafluoro-, mixt. with 1,1,1,2-tetrafluoroethane (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Ethane, 1,1,1,2-tetrafluoro-, mixt. contg. (9CI)
MF C5 F12 . C2 H2 F4
CI MXS
SR CA
LC STN Files: CA, CAPLUS, IMSPATENTS, IMSRESEARCH

CM 1

CRN 811-97-2
CMF C2 H2 F4



CM 2

CRN 678-26-2
CMF C5 F12

$F_3C-(CF_2)_3-CF_3$

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

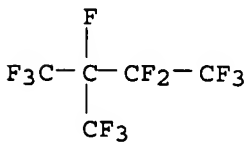
L1 ANSWER 14 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 678-26-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Pentane, 1,1,1,2,2,3,3,4,4,5,5,5-dodecafluoro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pentane, dodecafluoro- (6CI, 7CI, 8CI, 9CI)
OTHER NAMES:
CN Dodecafluoropentane
CN FC 87
CN Fluorinert FC 87
CN Fluorinert PF 5050
CN Flutec PP 50
CN Perflenapent
CN Perfluoro-n-pentane
CN Perfluoropentane
CN PF 5050
CN QW 7437
CN R 41(12)
CN R-4112
DR 128664-89-1, 96162-24-2
MF C5 F12
CI COM
LC STN Files: ADISINSIGHT, ADISNEWS, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSDRUGNEWS, IMSPATENTS, IMSRESEARCH, IPA, MEDLINE, PHAR, PROMT, PROUSDDR, RTECS*, SPECINFO, TOXCENTER, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

$F_3C-(CF_2)_3-CF_3$

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

671 REFERENCES IN FILE CA (1907 TO DATE)
672 REFERENCES IN FILE CAPLUS (1907 TO DATE)
56 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

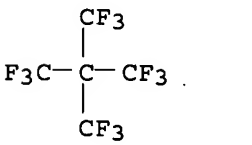
L1 ANSWER 15 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 594-91-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Butane, 1,1,1,2,2,3,4,4,4-nonafluoro-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butane, nonafluoro-2-(trifluoromethyl)- (6CI, 7CI, 8CI)
OTHER NAMES:
CN 2-(Trifluoromethyl)perfluorobutane
CN Perflisopent
CN Perfluoro-2-methylbutane
CN Perfluoroisopentane
MF C5 F12
CI COM
LC STN Files: ADISINSIGHT, BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMLIST, DDFU, DETHERM*, DRUGU, IPA, SPECINFO, TOXCENTER, USAN, USPATFULL
(*File contains numerically searchable property data)
Other Sources: WHO



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

45 REFERENCES IN FILE CA (1907 TO DATE)
45 REFERENCES IN FILE CAPLUS (1907 TO DATE)
12 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 16 OF 16 REGISTRY COPYRIGHT 2007 ACS on STN
RN 374-51-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Propane, 1,1,1,3,3,3-hexafluoro-2,2-bis(trifluoromethyl)- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Propane, hexafluoro-2,2-bis(trifluoromethyl)- (6CI, 7CI, 8CI)
OTHER NAMES:
CN Dodecafluoroneopentane
CN Perfluoro-2,2-dimethylpropane
CN Perfluoroneopentane
CN Tetrakis(trifluoromethyl)methane
MF C5 F12
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX, CHEMLIST, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

40 REFERENCES IN FILE CA (1907 TO DATE)
40 REFERENCES IN FILE CAPLUS (1907 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

```
=> s 374-51-6/rn
L2            1 374-51-6/RN

=> => d his

     (FILE 'HOME' ENTERED AT 07:19:41 ON 03 JUL 2007)

     FILE 'REGISTRY' ENTERED AT 07:20:03 ON 03 JUL 2007
L1           16 S C5F12
L2            1 S 374-51-6/RN

     FILE 'CA' ENTERED AT 07:22:43 ON 03 JUL 2007

=> s l2
L3           40 L2

=> s immersion or polarization
         52974 IMMERSION
        239302 POLARIZATION
L4      290135 IMMERSION OR POLARIZATION

=> 3 and 4
3 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s 3 and 4
       6664150 3
       5396850 4
L5     3108788 3 AND 4

=> s l3 and l4
L6            0 L3 AND L4

=> d l3 40 all

L3   ANSWER 40 OF 40  CA  COPYRIGHT 2007 ACS on STN
AN   50:15901  CA
OREF 50:3193e-h
ED   Entered STN:  22 Apr 2001
TI   The pyrolysis of trifluoromethylsulfur pentafluoride and its reactions
     with perfluoropropylene
AU   Dresdner, Richard
CS   Univ. of Florida, Gainesville
SO   Journal of the American Chemical Society (1955), 77, 6633-4
     CODEN: JACSAT; ISSN: 0002-7863
DT   Journal
LA   Unavailable
CC   10 (Organic Chemistry)
AB   The pyrolysis of CF3SF5 (I) and its reaction with C3F6 (II) have been
     studied at 425-518°.  The gases to be pyrolyzed or reacted were
     condensed air-free into a valved stainless steel container, equilibrated
     at room temperature, and passed at a flow rate of 0.20-0.40 g./min. through a
Ni
     tube filled with extruded Ni packing.  The I, b. -20.5°, was prepared
     from Me2S by the electrochem. process (Simons, et al., C.A. 43, 2876d).  I
     passed at 450° at a rate of 0.40 g./min. and 760 mm. through the
     tube was recovered unchanged.  I (21 g.) passed at 500° and 760 mm.
```

at a flow rate of 0.20 g./min. through the reactor gave 2 g. C2F6, 2 g. SF4, and 16 g. unchanged I. A series of 5 runs was carried under varying conditions with I and II (g. II and g. I used, flow rate in g./min., temperature, pressure in mm., and g. C2F6, SF4, mixed I-II, and material b. above -19° obtained given): 17, 21, 0.29, 425, 735, trace, trace, 37, 1; 16, 20, 0.32, 485, 740, 1, 1, 28, 4; 26, 33, 0.28, 512, 760, 1, 13, 15, 17; 60, 75, 0.40, 515, 760, 2, 27, 70, 38; 45, 55, 0.28, 518, 740, 1, 27, 25, 47. The combined material boiling above -19° fractionated gave 17 g. C5F10, b. -1 to 1°; 7 g. C5F12, b. 29-31°, m. above 10° with a range (3:2:1 mixture of neo-C5F12, iso-C5F12, and n-C5F12); 15 g. C6F14, b. 57-9°, nD25 1.2558; 9 g. C7F16, b. 82-3°, nD25 1.2685; and 6 g. fluorocarbon material, b. above 83°. A run with I-II mixture at 518° carried out over NaF pellets gave 5 g. C4F10, 2 g. C5F12, 5 g. C6F14, and 3 g. material, b. above 60°.

IT Pyrolysis
(of (trifluoromethyl)sulfur pentafluoride)

IT 7783-60-0P, Sulfur fluoride, SF4
RL: PREP (Preparation)
(formation from CFS8)

IT 76-16-4P, Ethane, hexafluoro-
RL: PREP (Preparation)
(formation of, from (trifluoromethyl)sulfur pentafluoride)

IT 374-51-6P, Propane, hexafluoro-2,2-bis(trifluoromethyl)-
594-91-2P, Butane, nonafluoro-2-(trifluoromethyl)- 678-26-2P, Pentane, dodecafluoro-
RL: PREP (Preparation)
(preparation of)

IT 373-80-8, Sulfur, (trifluoromethyl)-, pentafluoride
(pyrolysis of)

IT 116-15-4, Propene, hexafluoro-
(reaction with (trifluoromethyl)sulfur pentafluoride)

=> d l3 39 all

L3 ANSWER 39 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 50:34580 CA
OREF 50:6861a
ED Entered STN: 22 Apr 2001
TI The melting point of neoperfluoropentane
AU Dresdner, R. D.
CS Univ. of Florida, Gainesville
SO Journal of the American Chemical Society (1956), 78, 876
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 2 (General and Physical Chemistry)
AB cf. C.A. 50, 3193e. (CF3)2SF4 and CF3CF:CF2 at 520° yielded a mixture of isomers, b. 28.5-9.5°, from which was isolated neo-C5F12, m. 78.3°, vapor pressure at 26°, 650 ± 2 mm.

IT Vapor pressure
(of neoperfluoropentane)

IT 374-51-6P, Propane, hexafluoro-2,2-bis(trifluoromethyl)-
RL: PREP (Preparation)
(preparation, m.p. and vapor pressure of)

=> d l3 38 all

L3 ANSWER 38 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 51:75505 CA
OREF 51:13567d-f
ED Entered STN: 22 Apr 2001
TI Nuclear magnetic resonance spectra of some fluorocarbon derivatives

AU Muller, Norbert; Lauterbur, Paul C.; Svatos, George F.
CS Army Chem. Center, MD
SO Journal of the American Chemical Society (1957), 79, 1807-10
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 3 (Electronic Phenomena and Spectra)
AB F19 nuclear magnetic resonance (NMR) spectra of 28 fluoroorg. compds. were measured. The observed chemical shifts (δ), spin-spin couplings, and ranges of δ values for F atoms in different structural groupings are tabulated. The spectra (especially the hyperfine structures resulting from spin-spin coupling) were often used to choose or confirm a structure from among several possible choices. Correlations between δ and electron d. around the F atom in several structures, and coupling consts. for some spin-spin interactions were presented.
IT Fluorocarbons
(nuclear magnetic resonance of F in)
IT Nuclear magnetic resonance
(of fluorine in fluorocarbons)
IT 382-17-2, Propionitrile, 3,3,3-trifluoro-2-(trifluoromethyl)- 422-64-0, Propionic acid, pentafluoro- 423-32-5, Propylamine, nonafluoro-
(fluorine nuclear magnetic resonance in)
IT 354-92-7, Propane, heptafluoro-2-(trifluoromethyl)- 354-98-3, Hexane, tridecafluoro-3-pentafluoroethyl- 355-25-9, Butane, decafluoro- 355-68-0, Cyclohexane, dodecafluoro- 357-96-0, Ether, 2-fluoroethyl 1,1,3,3,3-pentafluoro-2-(trifluoromethyl)propyl 358-21-4, Ether, bis(pentafluoroethyl) 359-71-7, Piperidine, 2,2,3,3,4,4,5,5,6,6-decafluoro-1-(trifluoromethyl)- 360-53-2, Ether, methyl 1,3,3,3-tetrafluoro-2-(trifluoromethyl)propenyl 371-71-1, Imidocarbonyl fluoride, (trifluoromethyl)- 373-19-3, Diethylamine, 2,2'-difluoro- 374-51-6, Propane, hexafluoro-2,2-bis(trifluoromethyl)- 378-94-9, Morpholine, nonafluoro- 382-26-3, Ether, methyl 1,1,3,3,3-pentafluoro-2-(trifluoromethyl)propyl 382-28-5, Morpholine, 2,2,3,3,5,5,6,6-octafluoro-4-(trifluoromethyl)- 383-97-1, 1,1'-Bipiperidine, eicosafluoro- 383-98-2, Urea, 1,1,3,3-tetrakis(trifluoromethyl)- 384-01-0, Propene, 1,1-bis(allyloxy)-3,3,3-trifluoro-2-(trifluoromethyl)- 432-00-8, Carbamoyl fluoride, bis(trifluoromethyl)- 432-10-0, Oxazolidine, 2,2,4,4,5,5-hexafluoro-3-pentafluoroethyl- 433-73-8, Ether, propyl 1,3,3,3-tetrafluoro-2-(trifluoromethyl)propenyl 514-03-4, Dibutylamine, 1,1,1',1',2,2,2',2',3,3,3',3',4,4,4,4',4',4'-octadecafluoro-N-(trifluoromethyl)- 559-93-3, Methylamine, 1,1,1-trifluoro-N-octafluorobutylidene- 758-48-5, Diethylamine, 1,1,1',1',2,2,2,2',2',2'-decafluoro-N-(trifluoromethyl)- 759-14-8, Ether, 2-fluoroethyl 1,3,3,3-tetrafluoro-2-(trifluoromethyl)propenyl 836-77-1, Piperidine, undecafluoro-
(nuclear magnetic resonance of F in)
IT 7782-41-4, Fluorine
(nuclear magnetic resonance of, in fluorocarbons)
IT 384-01-0P, Ketene, bis(trifluoromethyl)-, diallyl acetal
RL: PREP (Preparation)
(preparation of)

=> d l3 37 all

L3 ANSWER 37 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 52:113029 CA
OREF 52:19901g-i,19902a-b
ED Entered STN: 22 Apr 2001
TI Some thermal reactions of perfluoroalkyl derivatives of sulfur hexafluoride with fluorocarbon olefins
AU Dresdner, R. D.; Mao, T. J.; Young, J. A.
CS Univ. of Florida, Gainesville
SO Journal of the American Chemical Society (1958), 80, 3007-9

CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 10B (Organic Chemistry: Aliphatic Compounds)
AB (CF3CCl:)2 refluxed with excess Zn powder in absolute iso-PrOH yielded above 60% (CF3C.tplbond.)2 (I), b. -24°. CF3CF:CF2 (20 g.), b. -29°, passed through 42 g. (CF3)2SF4, the gaseous mixture passed at 0.15 g./min. at atmospheric pressure through a tube at 518° with a contact time of 30-40 sec., and the condensate in an attached cold trap fractionated gave 11.5 g. SF4, b. -40 to -39°, 3.0 g. CF3CF:CF2, b. -30 to -29°, and 14.5 g. C5F12 isomers, b. 28.5-9.5° melts to a slush below 10° an overhead fraction (4 g.) washed with 20% aqueous NaOH gave C2F6. A larger sample of the isomeric C5F12 kept below 0° in vacuo left finally about 1 g. crystalline neo-C5F12, m. 76.3-8.2°; it converted in a sealed tube within a few days to an extremely viscous glass which could be recrystd. by cooling to -80°. I passed through the reactor at 510° at 0.13 g./min. was recovered unchanged. I (117 g.) and 114 g. CF3SF5 passed at 0.30 g./min. through the reactor at 525° gave 51 g. SF4 and 15 g. unchanged CF3SF5; the higher-boiling material fractionated gave 22 g. material (A), b. 90-2° 20 g. distillate (B), b. 92-4° nb25 1.2902, and 22 g. 97% pure [(CF3)2C:C(CF3)]2 (II), b. 111.5-13.0°, nD25 1.3002. Fraction B did not react with Br or MeOH in a sealed glass tube at 200°. Fraction B refluxed with basic KMnO4 several days destroyed 20% of an aliquot with a drop of nD25 to 1.2886; further refluxing during 4 days with fresh basic KMnO4 destroyed another 20% but without change of the refractive index. Both fractions (A and B) are mainly (CF3)2C:C(CF3)C(CF3):CFCF3, b. 92.2°, d25 1.6996, MRD 43.70. The II purified in the usual manner with basic KMnO4 yielded 99.5%-pure II, nD25 1.2994, d25 1.7359, MRD 49.78°, b. 111.0°
IT Olefins
(fluoro, reaction with trifluoroalkylsulfur fluorides)
IT Sulfur, trifluoroalkyl-
(fluorides, reaction with fluoroolefins)
IT 678-26-2, Pentane, dodecafluoro-
(isomers)
IT 374-51-6P, Propane, hexafluoro-2,2-bis(trifluoromethyl)-
2342-10-1P, 2,4-Hexadiene, hexafluoro-2,3,4,5-tetrakis(trifluoromethyl)-
3825-03-4P, 2,4-Hexadiene, heptafluoro-2,3,4-tris(trifluoromethyl)-
RL: PREP (Preparation)
(preparation and spectrum of)

=> d l3 36 all

L3 ANSWER 36 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 57:60035 CA
OREF 57:11928b-f
ED Entered STN: 22 Apr 2001
TI Free energies of formation of fluorocarbons and their radicals. Thermodynamics of formation and depolymerization of polytetrafluoroethylene
AU Bryant, W. M. D.
CS E. I. du Pont de Nemours & Co. Inc., Wilmington, DE
SO Journal of Polymer Science (1962), 56, 277-96
CODEN: JPSCAU; ISSN: 0022-3832
DT Journal
LA Unavailable
CC 7 (Thermodynamics, Thermochemistry, and Thermal Properties)
AB Enthalpies and free energies of formation of a number of aliphatic fluorocarbons and their radicals at 298.15°K. and the ideal gaseous condition were calculated, for CnF2n+2(g) $-\Delta Hf298.15 = 94.5 (n - 2) + 316.5$ kcal., $S°298.15 = 46.41 + 16.066n$, and for CnF2n+1•(g) $S°298.15 = 44.91 + 16.066n$. The free energies of formation at 298.15°K. were calculated for the following compds. and radicals

(compound or radical, ΔF°f298.15 kcal./mole): CF4 -207.04, C2F6 -295.6, C2F4 -143.48, C3F8 -295.6, C3F6 -240.2°, n-C5F12 - 548.8, n-C6F14 - 633.2, n-C7F16 -717.6, n-C8F18 -802.0, n-C9F20 -886.4, n-C10F22 -970.8, n-C19F24 - 1055.2, n-C12F26 - 1139.6, n-C12F24 - 999.8, n-C16F34 -1477.2, n-C24F50 -2152.3, (F3C)3CF -473.4, (F3C)2CFCF2CF3 -558.4, (F3C)4C - 570.5, CF3•. - 109.15, C2F5• -197.9, CF2:CF•-44.2, CF3CF2CF2• -282.3, (F3C)2CF• -295.3, n-C4F9. -366.7, (F3C)2.CFCF2• -376.7, (F3C)3C. -399.5, n-C5F11• -451.1, (F3C)2CF-CF2CF2•-460.4, (F3C)3CCF2• -473.1, n-C6F13• -535.5, n-C7F13• -619.9, n-C8F17• -704.3, n-C9F19• -788.7, n-C10F21• -873.1, n-C11F23• -957.5, n-C12F25• -1041.9; n-C16F33• -1379.5, n-C24F49• -2054.6. Calcns. of Δ-F°298.15 and ΔH°298.15show that the effects of the initiation and termination steps become increasingly small as compared to the propagation step in the polymerization of C2F4. The tendency of a fluorocarbon radical to revert to a perfluoroolefin by the loss of F at ordinary temps. is very remote. Chain transfer with the monomer may be of little importance in the polymerization of C2F4. At elevated temps., depolymerization is to be expected, although initiation of the depolymerization reactions need not be merely reversal of the termination process.

IT Fluorocarbons
(free energy of formation of)

IT Free energy
Thermodynamics
(of depolymerization of tetrafluoroethylene polymers, of formation of fluorocarbons and radicals and of polymerization of C2F4)

IT Heat of formation
(of fluorocarbons and radicals)

IT Heat of polymerization
(of tetrafluoroethylene)

IT Heat of depolymerization
(of tetrafluoroethylene polymers)

IT Depolymerization
(of tetrafluoroethylene polymers, thermodynamics of)

IT Polymerization
(of tetrafluoroethylene, thermodynamics of)

IT Dodecyl (free radical), pentacosafluoro-
Tetracosyl (free radical), nonatetracontafluoro-
RL: PREP (Preparation)
(free energy of formation of)

IT 1828-40-6 4495-98-1 88906-08-5
(Derived from data in the 7th Collective Formula Index (1962-1966))

IT 9002-84-0P, Ethylene, tetrafluoro-, homopolymer
RL: PREP (Preparation)
(formation and depolymerlzation of)

IT 116-14-3P, Ethylene, tetrafluoro-
RL: PREP (Preparation)
(formation and polymerization of)

IT 75-73-0P, Carbon tetrafluoride 76-16-4P, Ethane, hexafluoro- 76-19-7P, Propane, octafluoro- 116-15-4P, Propene, hexafluoro- 307-34-6P, Octane, octadecafluoro- 307-45-9P, Decane, docosafluoro- 307-49-3P, Undecane, tetracosafluoro- 307-59-5P, Dodecane, hexacosafluoro- 335-57-9P, Heptane, hexadecafluoro- 354-92-7P, Propane, heptafluoro-2-(trifluoromethyl)- 355-25-9P, Butane, decafluoro- 355-42-0P, Hexane, tetradecafluoro- 355-49-7P, Hexadecane, tetratriacontafluoro- 374-51-6P, Propane, hexafluoro-2,2-bis(trifluoromethyl)- 375-96-2P, Nonane, eicosafluoro- 594-91-2P, Butane, nnnafluoro-2-(trinfuoromethyl)- 678-26-2P, Pentane, dodecafluoro- 1766-41-2P, Tetracosane, pentacontafluoro- 2264-21-3P, Methyl, trifluoro- 3170-79-4P, Propyl, heptafluoro- 3248-60-0P, Ethyl, tetrafluoro-1-(trifluoromethyl)- 3369-48-0P, Ethyl, pentafluoro- 4495-88-9P, Undecyl, tricosafluoro- 4520-08-5P, Hexyl, tridecafluoro- 4520-67-6P, Butyl, nonafluoro- 4556-26-7P, Ethyl, trifluoro-1,1-bis(trifluoromethyl)- 4556-27-8P, Propyl, hexafluoro-2-(trifluoromethyl)-

4570-78-9P, Butyl, octafluoro-3-(trifluoromethyl)- 4588-28-7P, Propyl, pentafluoro-2,2-bis(trifluoromethyl)- 4605-17-8P, Vinyl, trifluoro- 4605-26-9P, Heptyl, pentadecafluoro- 4748-25-8P, Decyl, heneicosafluoro- 6060-61-3P, Octyl, heptadecafluoro- 6060-62-4P, Nonyl, nonadecafluoro- 6129-04-0P, Pentyl, undecafluoro- 6215-87-8P, Hexadecyl, tritriacontafluoro- 103249-37-2P, 6-Dodecene, tetracosafluoro-
RL: PREP (Preparation)
(free energy of formation of)

=> d l3 30-35 all

L3 ANSWER 30 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 85:77047 CA
ED Entered STN: 12 May 1984
TI Electron paramagnetic resonance study of x-irradiated perfluoroneopentane
AU Yim, Moon B.; Wood, David E.
CS Dep. Chem., Univ. Connecticut, Storrs, CT, USA
SO Journal of the American Chemical Society (1976), 98(12), 3457-60
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
AB CF3•, (CF3)3C•, (CF3)3CCF2•, and CF3CF2C(CF3)2• were observed via EPR in x-irradiated (CF3)4C and their equilibrium geometries and/or conformations suggested. The hyperfine splitting consts. of the observed perfluoroalkyl radicals were compared with their hydrocarbon counterparts and the size of the F consts. explained in terms of the effect of F substitution on hyperconjugation.
ST ESR x irradiated perfluoroneopentane; neopentane perfluoro x irradiated ESR; fluoroneopentane x irradiated ESR; radical perfluoroalkyl ESR
IT Conformation and Conformers
(of perfluoroalkyl radicals, ESR in relation to)
IT Electron spin resonance
(of x-irradiated perfluoroneopentane)
IT X-ray, chemical and physical effects
(on perfluoroneopentane, ESR of perfluoroalkyl radicals from)
IT Radicals, properties
RL: PRP (Properties)
(perfluoroalkyl, conformation of, ESR in relation to)
IT 2264-21-3
RL: PRP (Properties)
(ESR of)
IT 4556-26-7 4588-28-7 60010-35-7
RL: PRP (Properties)
(conformation of, ESR in relation to)
IT 374-51-6
RL: PROC (Process)
(x-irradiation of, ESR in relation to)

L3 ANSWER 31 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 85:20528 CA
ED Entered STN: 12 May 1984
TI Nitrogen compounds as high yield precursors to branched fluorocarbons by direct fluorination
AU Adcock, J. L.; Catsikis, B. D.; Thompson, J. W.; Lagow, R. J.
CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, USA
SO Journal of Fluorine Chemistry (1976), 7(1-3), 197-204
CODEN: JFLCAR; ISSN: 0022-1139
DT Journal
LA English
CC 23-3 (Aliphatic Compounds)
Section cross-reference(s): 28
AB Low-temperature direct fluorination of highly-branched nitriles and amines under

favorable conditions gave good yields of perfluorinated hydrocarbons. Thus, Me3CCN gave (CF3)4C and Me3CNH2 gave (CF3)3CF, which suggests the lability of NF2 groups under the conditions of the experiment In contrast, when normal nitriles, such as glutaronitrile, and N-containing ring compds., such as morpholine, are fluorinated, the corresponding N-containing fluorocarbon is produced in higher yields than previously reported by other fluorination methods.

ST fluorocarbon; hydrocarbon fluorinated aliph; nitrogen compd fluorination branching; morpholine perfluoro

IT Fluorocarbons
RL: RCT (Reactant); RACT (Reactant or reagent)
(aliphatic, by fluorination of branched aliphatic nitrogen compds.)

IT Fluorination
(of branched aliphatic nitriles and amines to give fluorocarbons)

IT 75-64-9 544-13-8 630-18-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of)

IT 7727-37-9D, Nitrogen, aliphatic and heterocyclic
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of, branching in relation to)

IT 110-91-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of, direct)

IT 354-92-7P 374-51-6P 378-94-9P 2993-15-9P 59571-39-0P 59571-40-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L3 ANSWER 32 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 84:9070 CA
ED Entered STN: 12 May 1984
TI Effect of hydrostatic pressure on self-diffusion and plastic deformation in plastic crystals
AU McKay, Peter; Sherwood, John N.
CS Dep. Pure Appl. Chem., Univ. Strathclyde, Glasgow, UK
SO Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1975), 71(12), 2331-9
CODEN: JCFTAR; ISSN: 0300-9599
DT Journal
LA English
CC 65-1 (General Physical Chemistry)
Section cross-reference(s): 22, 75

AB High temperature creep measurements in 4 face centered cubic crystals, e.g., cyclohexane, and 4 body centered cubic crystals, e.g., camphene, and radiotracer self-diffusion in hexamethylethane (I) and pivalic acid (II) at hydrostatic pressures of 1-60 MN/m2 were used to determine the activation vols. (V+). The similarity between V+ for both processes in I and II showed that high temperature deformation is self-diffusion controlled. In the face centered cubic solids and camphene V+ was 1.-1.3 Ω and temperature-independent, the dominant mechanism being vacancy migration. For hexamethylethane and α-P V+ was temperature-dependent and a mixed vacancy-divacancy diffusion process was proposed. Succinonitrile gave an anomalous V+ of 0.5-0.6 Ω which could be caused by point or line defects or a more complex mechanism involving interstitial motion. The discrepancy between self-diffusion parameters derived from creep data and NMR measurements was discussed.

ST creep crystal hydrostatic pressure; diffusion self crystal hydrostatic pressure; plastic crystal activation vol; hydrostatic pressure crystal diffusion

IT Crystals
(diffusion of plastic, self-, effect of hydrostatic pressure on)

IT Activation volume
(for diffusion and plastic deformation, in plastic crystals)

IT Creep

(in plastic crystals, effect of hydrostatic pressure on)
IT Diffusion
(in plastic crystals, self-, effect of hydrostatic pressure on)
IT Plastic deformation
(of crystals, effect of hydrostatic pressure on)
IT 75-98-9 594-82-1
RL: PRP (Properties)
(plastic deformation and self-diffusion in plastic crystals of, activation volume in relation to)
IT 79-92-5 110-61-2 110-82-7, properties 355-68-0 374-51-6 7723-14-0, properties
RL: PRP (Properties)
(plastic deformation of crystals of, activation volume in relation to)

L3 ANSWER 33 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 83:130702 CA
ED Entered STN: 12 May 1984
TI Vibrational spectra and normal coordinate analysis of trifluoromethyl compounds. VIII. Perfluoroneopentane
AU Buerger, H.; Eujen, R.; Lagow, R. J.
CS Inst. Anorg. Chem., Tech. Univ. Braunschweig, Braunschweig, Fed. Rep. Ger.
SO Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (1975), 31A(5-6), 777-87
CODEN: SAMCAS; ISSN: 1386-1425
DT Journal
LA German
CC 22-2 (Physical Organic Chemistry)
AB Gas phase ir and liquid and solid state Raman spectra of C(CF3)4 were observed and completely assigned apart from the torsion bands. The results were consistent with Td symmetry. The force field calculated by transferring force consts. from CF3 derivs. reproduced the observed frequencies and the Coriolis consts. Strong coupling of the a1 vibrations was observed
ST perfluoroneopentane IR Raman; force const perfluoroneopentane
IT Force constant
Infrared spectra
Raman spectra
(of perfluoroneopentane)
IT 374-51-6
RL: PRP (Properties)
(ir and Raman spectra of)

L3 ANSWER 34 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 82:139477 CA
ED Entered STN: 12 May 1984
TI Synthesis of structurally unusual fluorocarbons by direct fluorination
AU Maraschin, N. J.; Catsikis, B. D.; Davis, L. H.; Jarvinen, G.; Lagow, R. J.
CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, USA
SO Journal of the American Chemical Society (1975), 97(3), 513-17
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
CC 24-10 (Alicyclic Compounds)
Section cross-reference(s): 23, 47
AB The reaction of F with hydrocarbons (neopentane, hexamethylethane, norbornane, norbornadiene, bicyclo[2.2.2]octane, adamantane, cyclooctane) was carefully controlled (2 reactors described) to give perfluorinated and/or monohydropolyfluorinated hydrocarbons.
ST fluorination hydrocarbon reactor; perfluorocarbon fluorination hydrocarbon; neopentane fluorination; norbornane fluorination; bicyclooctane fluorination; adamantane fluorination; cyclooctane fluorination
IT Hydrocarbons, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of)

IT Reactors
(for fluorination of hydrocarbons)
IT Fluorination
(per-, of hydrocarbons)
IT Fluorocarbons
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation from hydrocarbons)
IT 121-46-0 279-23-2 280-33-1 281-23-2 292-64-8 463-82-1 594-82-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of, reactor for)
IT 335-92-2P 374-51-6P 374-82-3P 4934-61-6P 22630-77-9P
39902-62-0P 54767-15-6P 54767-16-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L3 ANSWER 35 OF 40 CA COPYRIGHT 2007 ACS on STN
AN 79:4881 CA
ED Entered STN: 12 May 1984
TI Successful fluorination of neopentane. A challenge met by direct fluorination
AU Maraschin, N. J.; Lagow, R. J.
CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, USA
SO Inorganic Chemistry (1973), 12(6), 1458-9
CODEN: INOCAJ; ISSN: 0020-1669
DT Journal
LA English
CC 23-3 (Aliphatic Compounds)
AB Perfluoroneopentane is formed by fluorination of neopentane under He in a cryogenic reactor at .apprx. -78°.
ST neopentane perfluorination cryogenic reactor; fluorination neopentane cryogenic reactor
IT Fluorination
(of neopentane, cryogenic reactor for)
IT 7782-41-4, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of neopentane by, cryogenic reactor for)
IT 463-82-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorination of, cryogenic reactor for)
IT 374-51-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

=> s liquid
L7 696735 LIQUID

=> s l3 and l7
L8 0 L3 AND L7

=> s pure or purity
440373 PURE
170655 PURITY
L9 592604 PURE OR PURITY

=> s l3 and l9
L10 2 L3 AND L9

=> d 1-2 all

L10 ANSWER 1 OF 2 CA COPYRIGHT 2007 ACS on STN
AN 90:130079 CA
ED Entered STN: 12 May 1984
TI Carbon-13 nuclear magnetic resonance spectra of trifluoromethyl Group 4 compounds

AU Harmon, Linda A.; Liu, Edmund K. S.; Lagow, Richard J.
CS Dep. Chem., Univ. Texas, Austin, TX, USA
SO Inorganic Chemistry (1979), 18(3), 607-9
CODEN: INOCAJ; ISSN: 0020-1669
DT Journal
LA English
CC 73-4 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)
AB The 13C chemical shifts and C-F coupling consts. for tetrakis(trifluoromethyl) compds. (CF3)4MIV, where M = C, Ge, and Sn, and tris(trifluoromethyl)(difluoromethyl)methane are reported. The trends in the 13C chemical shifts are the reverse of that expected on the basis of pure electronegativity effects. Correlations between C-F coupling consts. and both F chemical shifts and the position in the periodic table of the substituents directly attached to the C atom are observed for trifluoromethyl derivs. of main-group elements.
ST NMR Group 4 trifluoromethyl
IT Nuclear magnetic resonance
(of carbon-13, in Group IV trifluoromethyl compds.)
IT 374-51-6 2993-15-9 41268-44-4 55642-43-8
RL: PRP (Properties)
(NMR of carbon-13 in)

L10 ANSWER 2 OF 2 CA COPYRIGHT 2007 ACS on STN
AN 52:113029 CA
OREF 52:19901g-i,19902a-b
ED Entered STN: 22 Apr 2001
TI Some thermal reactions of perfluoroalkyl derivatives of sulfur hexafluoride with fluorocarbon olefins
AU Dresdner, R. D.; Mao, T. J.; Young, J. A.
CS Univ. of Florida, Gainesville
SO Journal of the American Chemical Society (1958), 80, 3007-9
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 10B (Organic Chemistry: Aliphatic Compounds)
AB (CF3CCl:)2 refluxed with excess Zn powder in absolute iso-PrOH yielded above 60% (CF3C.tplbond.)2 (I), b. -24°. CF3CF:CF2 (20 g.), b. -29°, passed through 42 g. (CF3)2SF4, the gaseous mixture passed at 0.15 g./min. at atmospheric pressure through a tube at 518° with a contact time of 30-40 sec., and the condensate in an attached cold trap fractionated gave 11.5 g. SF4, b. -40 to -39°, 3.0 g. CF3CF:CF2, b. -30 to -29°, and 14.5 g. C5F12 isomers, b. 28.5-9.5° melts to a slush below 10° an overhead fraction (4 g.) washed with 20% aqueous NaOH gave C2F6. A larger sample of the isomeric C5F12 kept below 0° in vacuo left finally about 1 g. crystalline neo-C5F12, m. 76.3-8.2°; it converted in a sealed tube within a few days to an extremely viscous glass which could be recrystd. by cooling to -80°. I passed through the reactor at 510° at 0.13 g./min. was recovered unchanged. I (117 g.) and 114 g. CF3SF5 passed at 0.30 g./min. through the reactor at 525° gave 51 g. SF4 and 15 g. unchanged CF3SF5; the higher-boiling material fractionated gave 22 g. material (A), b. 90-2° 20 g. distillate (B), b. 92-4° nb25 1.2902, and 22 g. 97% pure [(CF3)2C:C(CF3)]2 (II), b. 111.5-13.0°, nD25 1.3002. Fraction B did not react with Br or MeOH in a sealed glass tube at 200°. Fraction B refluxed with basic KMnO4 several days destroyed 20% of an aliquot with a drop of nD25 to 1.2886; further refluxing during 4 days with fresh basic KMnO4 destroyed another 20% but without change of the refractive index. Both fractions (A and B) are mainly (CF3)2C:C(CF3)C(CF3):CFCF3, b. 92.2°, d25 1.6996, MRD 43.70. The II purified in the usual manner with basic KMnO4 yielded 99.5%-pure II, nD25 1.2994, d25 1.7359, MRD 49.78°, b. 111.0°
IT Olefins
(fluoro, reaction with trifluoroalkylsulfur fluorides)

IT Sulfur, trifluoroalkyl-
(fluorides, reaction with fluoroolefins)
IT 678-26-2, Pentane, dodecafluoro-
(isomers)
IT 374-51-6P, Propane, hexafluoro-2,2-bis(trifluoromethyl)-
2342-10-1P, 2,4-Hexadiene, hexafluoro-2,3,4,5-tetrakis(trifluoromethyl)-
3825-03-4P, 2,4-Hexadiene, heptafluoro-2,3,4-tris(trifluoromethyl)-
RL: PREP (Preparation)
(preparation and spectrum of)

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